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ABSTRACT

The fall 1976 survey of engineering freshmen is the third of a series of five surveys seeking to determine the characteristics and attitudes of male and female engineering students, and the changes in these areas as students proceed through their first two years in engineering programs. Fourteen schools participated in the 1976 survey. An 80-item questionnaire was completed by 1,861 respondents (852 women and 1,009 men). Results were analyzed for response patterns by men and women and for differences between the two groups. Areas included in the study were: engineering major field, parental influence, reasons for career choice, reasons for graduate study, occupational goals, preferred professional work situation, source of job satisfaction, parents' background, subjects enjoyed in high school, school background, leisure time patterns, college performance, and future job preferences. Many differences are identified. (RH)

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RESULTS OF FALL 1976 SURVEY OF ENGINEERING FRESHMEN

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Introduction

The fall 1976 survey of engineering freshmen is the third of a series of five surveys seeking to determine the characteristics and attitudes of male and female engineering students, and the changes in these areas as students proceed through their first two years in engineering programs. Results of the two previous surveys have been presented in "Results of Fall 1975 Survey of Engineering Freshmen (Revised)" and "Results of Spring 1976 Survey of Engineering Freshmen."

Survey Population and Sample

The survey results refer to the population of all first-time engineering freshmen who entered one of forty-two schools during the fall 1976 term. We estimate that there were 21,376 students in this population, including 17,964 men and 3,412 women (16%).

Fourteen schools, including thirteen of the original sixteen schools which comprised the fall 1975 survey sample, participated in the fall 1976 survey. Michigan Technological University replaced the University of Tennessee at Knoxville, a randomly selected school which participated in fall 1975 but not in the spring 1976 survey. One of the eight schools selected with certainty (Texas A&M University) and one of the eight randomly selected schools (Vanderbilt University) did not participate in fall 1976. In order to adjust for the non-participation of these two schools, the responses of students in the other schools were subjected to additional weighting procedures. For the seven certainty schools, men's weights were multiplied by a factor of 1.21, and women's by a factor of 1.16. These weight factors were based on the size of the male and female freshman engineering enrollments at Texas A&M University for fall 1975 relative to the enrollments of the other seven certainty schools for fall 1976. For the seven randomly selected schools, men's weights were multiplied by a factor of 1.07, and women's by a factor of 1.11. These weight factors were based on the size of the male and female freshman engineering enrollments at Vanderbilt University for fall 1975 relative to the enrollments of the other seven randomly selected schools for fall 1976.

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The total number of women freshman engineers at the fourteen schools was 1,315. The number of men was 7,630. All 1,315 women and 1,618 of the men comprise the survey sample.

The Questionnaire

The questionnaire administered in the fall of 1976 consisted of 80 items designed by the research team. A number of the questionnaire items were adapted from Part I of the College Student Questionnaires, with the permission of the Educational Testing Service. The questionnaire took about 30 minutes to complete.

Questionnaires were administered during fall term at the fourteen schools. Response rates varied considerably from school to school, ranging from a high of 92% to a low of 23%. The overall response rate was 65% for women students and 62% for men. In all, 852 women and 1,009 men completed the survey for a total of 1,861 respondents. The presence of both school and student non-response creates some non-response bias of unknown magnitude. Nonresponse adjustment procedures are included in the analysis of the survey data in an attempt to minimize this nonresponse bias.

Analysis

Data were analyzed in terms of estimates of the proportions of men and of women in the population who would have a given response to a question. In order to make valid estimates of the population proportions, the data were subjected to statistical weighting procedures. Each respondent was assigned a weight having three components. The first component adjusts the sample to represent all students in the population. The second component is an adjustment for student non-response. The third component adjusts for the non-participation of Texas A&M University and of Vanderbilt University.

The precision of the estimated proportions was gauged by obtaining estimates of the standard errors of these estimated proportions. The standard error of an estimated proportion is a measure of the variability that the estimated proportion would have in repeated samples of the same type from this population. Typical standard errors of estimated proportions for this survey range from .005 to .05. We also estimated the precision of the difference between the estimated proportions for men and for women. Typical estimated standard errors of differences in estimated proportions between men and women also range from .005 to .05. By comparing the difference in the estimated proportions of men and women giving a certain response with the estimated standard error of the difference, we determined whether the differences in estimated proportions were statistically significant.

Results

Each survey question was tested for statistical significance of the difference in the estimated proportions of men and women giving a particular response or responses to the question. We used two levels of statistical significance, the .05 level and the .01 level. A difference that was significant at the .05 level means that there was only about one chance in twenty that the magnitude of the observed difference in estimated proportions would be found if the population proportions were equal. Significance at the .01 level means that there was only about one chance in a hundred that the magnitude of the observed difference in estimated proportions would be found if the population proportions were equal.

Survey results are given in the following table. Responses in brackets were considered as one response in the statistical analysis.

Estimated Proportions of Students

Responding to Each Alternative in the Fall 1976 Survey

Item and Response Description	Total	Men	Women	Significance of Difference+
1. Sex				
1. Male	84.0%	100.0%		
2. Female	16.0%		100.0%	
No Response				
2. Age				
1. 16 or under	0.7	0.8	0.2	**
2. 17	13.5	12.2	20.0	
3. 18	78.6	78.9	77.4	
4. 19	4.2	4.7	1.6	**
5. 20	0.5	0.6	0.0	
6. 21 or older	0.9	1.0	0.3	
No response	1.6	1.8	0.4	
3. Engineering major field				
1. General	2.1	2.0	2.5	
2. Aeronautical and astronautical	2.2	2.3	1.9	
3. Chemical	14.5	14.0	17.3	n.s.
4. Civil	11.3	11.5	9.9	n.s.
5. Electrical	18.2	20.2	7.6	**
6. Industrial	2.4	2.3	3.0	
7. Mechanical	13.7	14.5	9.1	*
8. Mineral, petroleum & geological	5.4	5.7	4.0	
No response	30.1	27.3	44.8	
4. Engineering major field (continued)				
1. Agricultural	0.8	0.8	1.1	
2. Architectural	0.9	0.7	1.7	
3. Bioengineering	1.8	1.3	4.2	**
4. Ceramics	0.4	0.4	0.5	
5. Computer Science	4.2	3.1	10.2	n.s.
6. Engineering Physics	1.3	1.3	1.3	
7. Metallurgical	1.7	1.6	1.9	
8. Nuclear Engineering	2.9	3.0	2.5	
9. Other engineering	3.3	3.1	4.2	
10. Undecided but within engineering	12.3	11.5	16.6	*
No response	70.5	73.2	55.9	

+n.s. indicates no significant difference between weighted proportions of men and women at the 5% level
*indicates significant difference at the 5% level
**indicates significant difference at the 1% level

Item and Response Description	Total	Men	Women	Significance of Difference
5. Non-engineering major field				
1. Biological science	0.6	0.7	0.0	
2. Physical science	1.3	1.4	0.7	
3. Mathematics	1.9	1.8	2.4	
4. Social science, humanities or arts	0.4	0.5	0.1	
5. Education	0.3	0.3	0.4	
6. Business	1.0	1.1	0.8	
7. Agriculture	0.3	0.4	0.0	
8. Architecture or city planning	0.4	0.4	0.5	
9. Other non-engineering	0.4	0.2	1.4	
10. Undecided but not engineering	1.1	1.1	0.8	
No response	92.4	92.3	92.9	
6. When first considered engineering				
1. In past 6 months	2.6	2.5	3.2	
2. Between 6 months and a year ago	10.8	10.3	13.5	**
3. About a year ago	26.9	25.3	35.3	
4. About two years ago	33.3	33.0	34.7	
5. Three years ago	12.3	13.3	7.2	**
6. Four or more years ago	13.4	14.9	5.5	**
No response	0.7	0.7	0.6	
7. Most influential in choice of major				
1. Father	32.3	32.3	32.5	
2. Mother	4.5	4.3	5.4	
3. Other adult acquaintance(s)	16.5	16.4	17.3	
4. Elementary school teacher(s) or principal	0.9	1.0	0.2	
5. High school teacher(s)	18.5	18.4	18.5	
6. High school counselor, dean or principal	7.7	7.9	6.3	n.s.
7. College teacher(s)	1.3	1.0	2.6	*
8. College counselor, dean or other non-teacher	1.5	1.4	2.0	
9. Close friend(s)	7.7	7.7	7.6	
No response	9.2	9.5	7.7	
8. Father's reaction to choice of major				
1. Strongly approves	69.4	69.5	69.3	
2. Mildly approves	17.2	17.3	16.8	
3. Indifference	6.8	7.0	6.0	
4. Disapproves somewhat	1.1	0.9	1.7	
5. Strongly disapproves	0.0	0.0	0.3	
6. Not aware of my present thinking	2.6	2.6	2.4	
No response	2.8	2.7	3.6	

Item and Response Description	Total	Men	Women	Significance of Difference
9. Mother's reaction to choice of major				
1. Strongly approves	62.9	62.3	65.8	**
2. Mildly approves	23.1	23.2	22.5	
3. Indifferent	9.6	10.1	7.2	*
4. Disapproves somewhat	1.3	1.2	1.8	
5. Strongly disapproves	0.0	0.0	0.0	
6. Not aware of my present thinking	1.9	1.9	1.4	
No response	1.3	1.4	1.2	
10. Guidance counseler's opinion of interest in engineering				
1. Strongly discouraged	0.5	0.5	0.4	
2. Mildly discouraged	1.9	1.8	2.7	
3. Unaware	36.0	36.4	34.2	n.s.
4. Mildly supported	28.6	28.9	26.7	n.s.
5. Strongly supported	30.5	30.0	33.3	n.s.
No response	2.4	2.4	2.6	
11. Most important reason for career choice				
1. Job openings available	17.2	16.4	21.7	**
2. Rapid career advancement	2.0	2.1	1.3	
3. High anticipated earnings	8.0	9.0	2.9	**
4. Contribution to society	2.9	2.5	4.9	**
5. Work with ideas	5.2	5.5	3.7	*
6. Prestige of the profession	1.1	1.1	0.9	
7. Opportunity to use special abilities and talents	19.8	19.6	20.4	
8. Work itself is interesting	37.1	36.8	38.5	
9. Opportunity to combine work and family	1.4	1.4	1.2	
10. Other	4.9	5.1	3.8	n.s.
No response	0.4	0.3	0.6	
12. Second reason for career choice				
1. Job openings available	24.4	23.7	28.3	**
2. Rapid career advancement	3.4	3.5	3.0	
3. High anticipated earnings	18.0	18.9	12.9	**
4. Contribution to society	6.6	6.7	6.1	
5. Work with ideas	8.2	8.4	7.3	
6. Prestige of the profession	1.9	2.0	1.5	
7. Opportunity to use special abilities and talents	12.9	12.5	15.0	n.s.
8. Work itself it interesting	18.6	18.5	18.8	
9. Opportunity to combine work and family	2.4	2.3	2.7	
10. Other	2.7	2.6	3.6	n.s.
No response	1.0	1.0	1.0	

Item and Response Description	Total	Men	Women	Significance of Difference
13. Highest degree planned				
1. No degree	0.1	0.2	0.0	
2. Bachelor's degree	35.0	34.5	37.6	n.s.
3. Master's degree, not in business	36.9	37.1	36.1	
4. M.B.A.	6.4	6.8	4.6	*
5. Ph.D. or Ed.D.	13.4	13.4	13.7	
6. Law degree	2.9	2.9	3.1	
7. Medical degree	2.0	1.9	2.7	n.s.
8. Dental degree	0.5	0.6	0.0	
9. Other degree	0.9	0.8	1.4	
No response	1.7	1.9	0.7	
14. Most important reason for graduate study				
1. Don't intend to pursue graduate study	29.3	28.6	32.9	n.s.
2. Expectation of increased earnings	9.9	11.2	2.9	**
3. Preparation for different profession	7.9	8.2	6.8	n.s.
4. Personal prestige and status	2.1	2.1	1.8	
5. Essential for long term career goals in engineering	20.8	21.0	19.9	
6. Intense intellectual interest in specific field	5.0	5.3	3.7	n.s.
7. Value developing abilities to fullest extent	17.9	17.3	21.5	n.s.
8. Other	2.6	2.0	5.4	**
No response	4.4	4.3	5.2	
15. Long-term occupational goals				
1. Academic life	7.7	7.5	8.9	
2. Business life	8.3	9.2	6.8	n.s.
3. Professional life	53.4	52.9	56.4	n.s.
4. Trained technician or craftsman	2.5	2.7	1.1	*
5. Creative arts	1.6	1.6	1.4	
6. Home and family	7.8	7.6	9.2	n.s.
7. Other	3.5	3.1	5.7	*
8. Insufficient thought given to decide	14.0	14.7	10.0	**
No response	0.7	0.8	0.5	
16. Preferred professional work situation				
1. Own business	10.9	12.1	4.2	**
2. Small business firm	6.4	6.5	5.7	
3. Medium to large firm or corporation	38.4	38.1	39.8	
4. Own professional office	6.1	6.4	4.3	**
5. Educational institution	1.6	1.7	0.9	
6. Public or private research institution	12.7	11.5	19.1	**
7. Public or private welfare agency	0.1	0.1	0.3	
8. Government service	3.9	3.6	5.3	*
9. Other	2.6	2.6	2.6	
10. I don't know	16.9	16.8	17.4	
No response	0.6	0.6	0.3	

Item and Response Description	Total	Men	Women	Significance of Difference
17. Most important source of job satisfaction				
1. Opportunity to use by abilities	26.6	26.0	29.7	*
2. Prospects of above average income	9.5	10.7	3.2	**
3. Freedom to be creative and original	11.0	11.5	8.8	n.s.
4. To work with people rather than things	3.9	3.1	8.0	**
5. To be helpful to others and/or useful to society	10.7	9.2	18.5	**
6. Stable, secure future	23.1	24.9	13.9	**
7. Compatability with colleagues	4.5	3.8	8.2	**
8. Avoidance of relatively high-pressure work	2.5	2.6	1.7	
9. Relative freedom from supervision	6.0	6.2	5.4	
No response	2.1	2.1	2.6	
18. Father's education				
1. No formal schooling or some grade school	1.2	1.3	0.8	
2. Finished grade school	2.7	2.8	1.9	
3. Some high school	5.0	5.2	4.3	
4. Finished high school	20.1	20.9	15.8	**
5. Business or trade school	6.0	6.2	5.1	
6. Some college	13.1	13.2	13.0	
7. Finished college	26.2	25.4	30.3	*
8. Graduate or professional school but no degree	5.3	4.9	7.4	*
9. Graduate or professional degree	19.4	19.2	20.4	
No response	1.0	1.0	1.0	
19. Mother's education				
1. No formal schooling or some grade school	0.8	0.8	0.5	
2. Finished grade school	1.6	1.6	1.7	
3. Some high school	4.2	4.4	3.0	
4. Finished high school	35.6	36.4	31.5	**
5. Business or trade school	8.6	8.5	9.2	
6. Some college	16.7	16.0	20.6	**
7. Finished college	20.9	20.8	21.4	
8. Graduate or professional school, no degree	3.4	3.3	4.0	
9. Graduate or professional degree	6.7	6.6	7.4	
No response	1.5	1.6	0.8	
20. Mother employed?				
1. No	49.8	50.6	45.8	**
2. Yes, part-time	20.3	20.4	20.2	
3. Yes, full-time	28.8	27.9	33.4	*
No response	1.0	1.2	0.5	

Item and Response Description	Total	Men	Women	Significance of Difference
21. Either parent an engineer?				
1. No	71.5	72.4	67.1	*
2. Father	27.5	26.7	32.0	n.s.
3. Mother	0.2	0.2	0.2	
4. Both	0.1	0.1	0.1	
No response	0.6	0.6	0.5	
22. Racial-ethnic background				
1. American Indian	0.0	0.0	0.3	
2. Asian	3.0	2.9	3.7	
3. Black, non-Hispanic	2.9	2.5	4.8	**
4. Hispanic	3.5	3.7	2.9	
5. White, non-Hispanic	86.1	86.5	84.4	
6. Other	2.0	2.0	1.9	
No response	2.4	2.5	2.0	
23. Religious preference				
1. Protestant	36.1	35.5	39.1	n.s.
2. Catholic	31.6	31.2	33.8	n.s.
3. Jewish	2.4	2.6	1.6	
4. Other religion	7.9	8.1	7.0	
5. No formal religion	19.4	19.9	16.6	*
No response	2.6	2.8	1.9	
24. Consults with parents on important personal decisions				
1. Almost always	22.0	20.8	28.0	*
2. Usually	31.6	30.6	36.9	**
3. Occasionally	29.4	31.0	21.3	**
4. Rarely	16.2	16.7	13.4	
No response	0.7	0.8	0.5	
25. Degree of dependence on parents				
1. Quite dependent	16.6	17.0	14.6	n.s.
2. Somewhat dependent	36.1	36.3	35.1	
3. Fairly independent	35.4	34.8	38.6	n.s.
4. Very independent	11.1	11.0	11.4	
No response	0.8	0.9	0.3	
26. High school class standing				
1. Top 2%	21.8	18.9	37.4	**
2. Top 5%	18.2	17.3	22.8	**
3. Top 10%	25.5	26.5	20.1	**
4. Top 20%	18.6	19.9	11.3	
5. Top 30%	8.2	9.0	3.9	**
6. Top 40%	1.8	2.0	0.5	
7. Top 50%	2.1	2.3	1.4	
8. Not among top 50%	0.3	0.3	0.1	
9. Don't know	2.9	3.1	1.8	
No response	0.7	0.7	0.5	

Item and Response Description	Total	Men	Women	Significance of Difference
27. Subject most enjoyed in high school				
1. Art	1.8	1.6	3.1	
2. Commercial	0.3	0.3	0.4	
3. English--including speech and literature	3.3	3.0	5.4	n.s.
4. Foreign language(s)	1.9	1.7	2.9	
5. Mathematics	34.6	32.0	48.7	**
6. Music	4.7	4.6	5.7	
7. Physical education	4.4	4.8	2.3	n.s.
8. Sciences	37.7	39.7	27.3	**
9. Shop	5.0	5.8	0.9	**
10. Social sciences	4.9	5.3	2.7	**
No response	1.1	1.2	0.6	
28. Subject least enjoyed in high school				
1. Art	5.8	5.6	7.1	
2. Commercial	9.2	7.7	17.4	**
3. English--including speech and literature	30.3	32.3	20.2	**
4. Foreign language(s)	24.2	26.6	11.7	**
5. Mathematics	2.4	2.5	1.8	
6. Music	4.1	4.1	3.9	
7. Physical education	5.9	4.8	11.9	**
8. Sciences	2.0	1.8	3.0	
9. Shop	2.2	2.5	0.9	
10. Social sciences	11.4	9.9	19.3	**
No response	2.4	2.3	2.9	
29. Highest score on mathematics portion of SAT				
1. 780 or above	3.5	3.8	2.0	
2. 750, 760, 770	7.4	7.7	5.9	**
3. 720, 730, 740	9.5	10.1	6.6	
4. 690, 700, 710	9.5	9.3	10.5	
5. 660, 670, 680	11.3	11.2	12.2	n.s.
6. 630, 640, 650	11.1	11.1	11.3	
7. 600, 610, 620	8.6	8.2	10.7	
8. 570, 580, 590	5.3	5.2	6.1	**
9. 540, 550, 560	4.2	3.8	6.3	
10. Below 540	2.0	1.7	3.5	**
No response	27.5	28.0	25.0	
30. Highest score on verbal portion of SAT				
1. 780 or above	0.2	0.3	0.2	
2. 750, 760, 770	0.7	0.6	1.3	*
3. 720, 730, 740	1.8	1.5	3.7	
4. 690, 700, 710	3.2	2.9	4.4	
5. 660, 670, 680	4.8	4.5	6.2	n.s.
6. 630, 640, 650	7.1	7.2	7.1	
7. 600, 610, 620	8.9	8.7	9.6	
8. 570, 580, 590	9.6	9.2	11.6	n.s.
9. 540, 550, 560	12.1	12.2	11.2	
10. Below 540	23.2	24.2	18.1	**
No response	28.4	28.8	26.5	

Item and Response Description	Total	Men	Women	Significance of Difference
31. Highest score on mathematics subtest of ACT				
1. 35-36	3.3	3.3	3.1	
2. 33-34	5.0	5.2	3.8	n.s.
3. 31-32	6.0	5.9	6.2	
4. 29-30	9.7	10.1	7.8	
5. 27-28	8.5	8.5	8.8	n.s.
6. 25-26	4.7	4.8	4.1	
7. 23-24	2.2	2.4	1.6	
8. 21-22	1.6	1.7	1.4	
9. 19-20	0.9	0.8	1.3	
10. Below 19	0.3	0.3	0.6	
No response	57.7	57.0	61.3	n.s.
32. Highest score on natural science subtest of ACT				
1. 35-36	1.3	1.3	1.1	
2. 33-34	7.0	7.5	3.9	**
3. 31-32	8.9	8.9	9.1	
4. 29-30	8.0	8.6	4.9	
5. 27-28	5.3	5.1	6.3	n.s.
6. 25-26	3.4	3.4	3.6	
7. 23-24	3.5	3.6	3.3	
8. 21-22	2.2	2.0	3.0	
9. 19-20	1.6	1.7	0.8	
10. Below 19	0.6	0.4	1.6	
No response	58.2	57.4	62.5	n.s.
33. Highest composite score on ACT				
1. 35-36	0.3	0.2	0.5	
2. 33-34	1.5	1.5	1.7	
3. 31-32	5.3	5.3	5.3	
4. 29-30	8.3	8.2	8.5	
5. 27-28	9.5	9.9	7.1	n.s.
6. 25-26	7.0	7.3	5.1	
7. 23-24	4.9	4.9	4.5	
8. 21-22	3.2	3.2	3.4	
9. 19-20	1.9	1.9	1.5	
10. Below 19	0.9	0.9	0.8	
No response	57.4	56.6	61.7	n.s.
34. Approximate high school grade average				
1. D+ or lower	0.2	0.2	0.0	
2. C-	0.4	0.4	0.3	
3. C	0.2	0.3	0.0	**
4. C+	2.0	2.4	0.4	
5. B-	4.8	5.5	1.3	
6. B	12.6	13.6	7.0	**
7. B+	24.0	25.3	17.7	
8. A-	26.2	25.6	29.2	**
9. A or A+	29.2	26.4	43.8	
No response	0.4	0.4	0.4	

Item and Response Description	Total	Men	Women	Significance of Difference
35. Approximate high school science and math grade average				
1. D+ or lower	0.1	0.1	0.2	
2. C-	0.3	0.4	0.1	
3. C	1.1	1.2	1.0	*
4. C+	1.8	2.0	0.4	
5. B-	4.3	4.6	2.9	
6. B	11.1	11.6	8.7	**
7. B+	16.9	17.6	13.4	
8. A-	22.8	22.1	26.7	
9. A or A+	40.7	39.7	45.6	**
No response	0.9	0.8	0.9	
36. Number of high school scholastic honors				
1. None	20.7	22.5	11.0	**
2. One or two	40.9	41.4	37.8	
3. Three or four	21.4	20.4	27.0	**
4. Five or more	15.6	14.3	22.7	*
No response	1.4	1.4	1.5	
37. Number of high school athletic honors				
1. None	47.0	44.8	58.6	**
2. One sport	26.8	27.7	22.1	*
3. Two sports	13.7	14.3	10.8	*
4. Three or more sports	11.4	12.0	8.4	n.s.
No response	1.0	1.1	0.2	
38. Non-required reading				
1. Science, math, engineering -- nonfiction	9.5	10.9	2.5	**
2. Science fiction	16.5	17.6	10.4	**
3. Mystery, westerns, adventure fiction	8.3	8.2	8.9	
4. History, economics, social and political issues, etc.	6.2	6.6	4.2	**
5. Psychology	1.6	1.7	1.3	
6. Novels, short stories, drama, poetry, etc.	23.2	17.0	55.8	**
7. Biographies and autobiographies	0.9	0.9	1.2	
8. Sports, "how-to-do," etc.--nonfiction	17.2	19.7	4.1	**
9. Other	6.1	6.3	5.6	
10. Did little or no outside reading	9.5	10.4	4.7	**
No response	0.9	0.8	1.5	
39. Time spent on homework as high school senior				
1. None or almost none	13.2	14.1	8.9	
2. About 1/2 hour per day	17.6	18.2	14.4	**
3. About 1 hour per day	26.7	27.4	23.0	
4. About 2 hours per day	25.6	24.6	30.8	
5. About 3 hours per day	11.8	11.3	14.3	**
6. Four or more hours per day	4.4	3.7	8.3	
No response	0.7	0.7	0.3	

Item and Response Description	Total	Men	Women	Significance of Difference
40. Participation in science activities				
1. Did not participate	58.8	58.2	61.8	n.s.
2. Participated, not very actively	26.3	26.4	25.5	
3. Participated very actively	13.8	14.2	11.8	n.s.
No response	1.1	1.2	0.9	
41. Participation in music activities				
1. Did not participate	62.8	65.6	48.3	**
2. Participated, not very actively	12.1	11.7	14.5	n.s.
3. Participated very actively	24.3	22.0	36.5	**
No response	0.7	0.7	0.7	
42. Participation in literary, debate, speech, drama				
1. Did not participate	64.0	66.5	51.2	**
2. Participated, not very actively	18.9	17.5	26.1	**
3. Participated very actively	16.0	14.8	22.0	**
No response	1.1	1.2	0.8	
43. Time spent on automotive activities per week				
1. None or less than one hour	61.0	56.1	86.7	**
2. One or two hours	21.2	23.7	8.0	
3. Three or four hours	9.2	10.5	2.4	**
4. Five or more hours	7.6	8.7	1.7	
No response	1.0	0.9	1.2	
44. Interest in modern art				
1. No interest whatsoever	25.5	27.4	15.3	**
2. Slightly interested	58.6	58.2	60.5	
3. Quite interested	12.5	11.5	17.4	**
4. Very much interested	3.0	2.3	6.7	
No response	0.4	0.5	0.1	
45. Pleasure from classical music				
1. None or very little	22.0	24.1	10.8	**
2. A moderate amount	36.0	36.8	31.8	
3. Quite a bit	23.8	22.7	29.4	**
4. A great deal	17.0	15.1	26.7	
No response	1.3	1.2	1.4	
46. Enjoyment of poetry				
1. None	17.7	19.6	8.0	**
2. Not very much	35.6	38.5	19.9	
3. Yes, to some extent	37.0	34.4	50.9	**
4. Yes, very much	9.2	6.9	20.9	
No response	0.5	0.6	0.3	

Item and Response Description	Total	Men	Women	Significance of Difference
47. Knowledge of history of painting				
1. Almost nothing	51.7	52.9	45.6	n.s.
2. A small amount	36.0	35.9	36.1	
3. A moderate amount	10.1	9.1	15.5	n.s.
4. A good deal	1.8	1.7	2.5	
No response	0.4	0.4	0.4	
48. Greatest personal satisfaction expected as a freshman				
1. Coursework in general	19.2	19.5	17.4	n.s.
2. Coursework in major	10.9	11.6	6.9	**
3. Individual study	1.8	1.9	0.9	
4. Organized extracurricular activities	7.4	7.8	5.3	*
5. "Bull sessions" with students	2.8	2.9	2.6	
6. Social life, dating, parties	9.6	10.3	6.0	*
7. Close friendships with students	8.0	7.3	11.7	**
8. Wide variety of acquaintances	7.3	6.4	11.8	**
9. Self-discovery, self-insight	26.3	25.2	32.0	*
10. Other	4.9	5.1	3.7	n.s.
No response	1.9	1.9	1.7	
49. Biggest problem expected as a freshman				
1. No major problems	17.8	17.4	20.1	n.s.
2. Finances	9.8	9.9	9.1	
3. Medical problems	0.7	0.7	0.5	
4. Handling course content	38.7	38.0	42.2	*
5. Relationships with opposite sex	7.8	8.6	3.7	**
6. Deciding on major	6.6	6.5	7.1	
7. Family relations	0.9	0.8	1.8	
8. Discriminatory practices	0.4	0.3	0.9	
9. "Finding" oneself	9.9	10.1	8.9	
10. Other problem	6.2	6.3	5.3	
No response	1.1	1.2	0.4	
50. Expected class rank				
1. Top 5%	5.5	5.8	3.9	n.s.
2. Top 10%	14.6	15.2	11.3	**
3. Top third	37.9	37.8	38.3	
4. Top half	33.2	32.6	36.4	n.s.
5. Lower half	6.0	5.8	7.1	n.s.
No response	2.9	2.9	3.0	
51. Estimated grade average				
1. A	14.2	15.2	8.9	**
2. B	60.5	59.7	64.8	n.s.
3. C	23.1	22.9	24.2	
4. D	0.4	0.4	0.4	
5. Lower than D	0.1	0.2	0.0	
No response	1.6	1.6	1.7	

Item and Response Description	Total	Men	Women	Significance of Difference
52. Academic performance expected in comparison with own sex				
1. Better than most	37.2	39.4	25.4	**
2. Equal performance	56.8	54.6	68.4	**
3. Worse than most	3.5	3.4	4.3	
No response	2.5	2.6	1.8	
53. Academic performance expected in comparison with opposite sex				
1. Better than most	42.9	47.6	18.0	**
2. Equal performance	49.5	45.8	69.2	**
3. Worse than most	5.0	3.8	11.2	**
No response	2.6	2.8	1.5	
54. Greatest expected influence this year				
1. Male faculty/staff member	11.1	11.2	11.1	
2. Female faculty/staff member	1.0	0.7	2.5	**
3. Male engineering students	19.0	19.6	15.9	**
4. Female engineering students	3.5	2.2	10.3	**
5. Other male friends on campus	23.3	25.9	9.6	**
6. Other female friends on campus	4.6	3.0	13.0	**
7. Other male friends from home town	3.1	2.6	5.8	**
8. Other female friends from home town	5.3	6.2	0.7	**
9. Family member(s)	10.8	10.7	11.7	
10. Other	12.8	12.4	14.8	n.s.
No response	5.4	5.6	4.5	
55. Interest in participating in athletics				
1. Would not be interested	16.8	14.9	26.9	**
2. Would like to participate, not actively	35.2	34.5	39.1	*
3. Would like to participate actively	46.9	49.6	32.9	**
No response	1.0	1.0	1.1	
56. Interest in participating in school spirit activities				
1. Would not be interested	55.5	57.1	46.6	**
2. Would like to participate, not actively	37.1	36.2	41.7	**
3. Would like to participate actively	6.6	5.8	11.0	**
No response	0.8	0.8	0.7	
57. Activities of student sections of professional organizations				
1. Would not be interested	23.6	24.9	16.4	**
2. Would like to participate, not actively	54.7	55.1	52.6	
3. Would like to participate actively	20.6	18.8	30.1	**
No response	1.1	1.1	0.9	

Item and Response Description	Total	Men	Women	Significance of Difference
58. Hope to join fraternity or sorority				
1. Yes	27.2	28.4	20.6	n.s.
2. No, or there are none at this school	69.7	68.1	78.3	
No response	3.1	3.5	1.1	
59. Preferred situation in ten years				
1. Single, full-time job	12.2	12.6	9.8	*
2. Married, no children, full-time job	31.3	28.9	44.3	**
3. Married, no children, part-time job	1.3	1.2	1.6	
4. Married, no children, not employed	0.1	0.2	0.0	
5. Married, with children, full-time job	46.8	52.2	18.5	**
6. Married, with children, part-time job	4.4	1.6	19.1	**
7. Married, with children, not employed	0.9	0.2	4.8	**
No response	2.9	3.1	1.9	
60. Preferred situation for spouse in ten years				
1. Will remain single	8.8	9.1	6.9	n.s.
2. No children, spouse have full-time job	19.9	15.4	43.8	**
3. No children, spouse have part-time job	10.0	11.8	0.5	**
4. No children, spouse not employed	1.9	2.2	0.4	**
5. Children, spouse have full-time job	10.4	4.2	43.3	**
6. Children, spouse have part-time job	21.1	24.9	1.2	**
7. Children, spouse not employed	22.0	26.0	0.6	**
No response	6.0	6.4	3.4	
61. Importance of becoming an authority in my field				
1. Essential	19.7	20.6	14.7	**
2. Very important	35.4	35.3	36.1	
3. Somewhat important	32.7	32.3	34.8	*
4. Not important	11.4	11.0	13.3	n.s.
No response	0.8	0.7	1.1	
62. Importance of raising a family				
1. Essential	16.1	16.3	14.8	
2. Very important	38.8	39.8	33.4	**
3. Somewhat important	28.2	28.3	27.7	
4. Not important	15.5	14.1	22.8	**
No response	1.4	1.4	1.2	
63. Having administrative responsibility for the work of others				
1. Essential	4.9	5.4	2.6	**
2. Very important	26.6	28.1	18.8	**
3. Somewhat important	43.6	43.1	46.4	n.s.
4. Not important	22.9	21.4	30.6	**
No response	2.0	2.0	1.7	

Item and Response Description	Total	Men	Women	Significance of Difference
64. Never being obligated to people				
1. Essential	7.3	7.5	6.3	
2. Very important	16.7	16.5	17.6	
3. Somewhat important	31.4	31.3	32.0	
4. Not important	42.6	42.6	42.7	
No response	2.0	2.1	1.4	
65. Getting married within the next five years				
1. Essential	3.7	3.7	3.6	
2. Very important	7.1	7.4	5.4	
3. Somewhat important	23.5	23.9	21.6	
4. Not important	63.5	62.7	67.6	n.s.
No response	2.2	2.3	1.8	
66. Most strongly support special assistance for minority engineering students in:				
1. Academic skills	15.8	15.9	15.3	
2. Laboratory skills	1.8	1.8	1.5	
3. Study skills	8.5	9.0	6.3	**
4. Career guidance	11.6	11.1	14.2	n.s.
5. Academic enrichment	6.9	6.6	8.6	n.s.
6. Peer support groups	9.3	7.8	16.7	**
7. None of these areas	38.6	40.0	31.1	**
No response	7.6	7.8	6.3	
67. Most strongly support special assistance for women engineering students in:				
1. Academic skills	10.4	10.5	10.1	
2. Laboratory skills	3.7	3.7	3.7	
3. Study skills	3.5	3.6	3.1	
4. Career guidance	20.1	18.7	27.2	**
5. Academic enrichment	5.6	5.0	8.5	**
6. Peer support groups	8.7	7.6	14.2	**
7. None of these areas	39.9	42.2	27.7	**
No response	8.1	8.6	5.4	
68. Plan to join Peace Corps or Vista				
1. Definitely not	35.3	36.9	26.6	**
2. Probably not	55.1	54.5	58.5	
3. Probably yes	7.0	6.0	12.3	**
4. Definitely yes	0.8	0.8	1.0	
No response	1.8	1.8	1.6	
69. Knowledgeable of political affairs				
1. Wholly uninformed	2.6	2.6	2.7	**
2. Not very well informed	30.4	28.0	43.3	
3. Fairly well informed	55.3	56.6	48.5	**
4. Very well informed	10.6	11.7	4.6	
No response	1.1	1.1	1.0	

Item and Response Description	Total	Men	Women	Significance of Difference
70. In favor of abolition of capital punishment				
1. Strongly disagree	35.6	37.8	23.9	**
2. Disagree but not strongly	32.4	33.1	28.7	
3. Agree but not strongly	16.3	14.9	23.4	**
4. Agree strongly	12.2	10.5	21.2	
No response	3.5	3.6	2.8	
71. Concern about children and obscene literature				
1. No	25.2	26.6	17.5	**
2. Cannot say	26.3	27.0	22.8	
3. Mildly upset	30.5	30.1	32.8	**
4. Very much upset	15.5	13.6	25.2	
No response	2.5	2.6	1.6	
72. Decision to drop bomb on Hiroshima				
1. Strongly feel decision right	25.3	28.2	10.5	**
2. Decision right, but feelings not strong	41.3	43.1	31.8	
3. Decision wrong, but feelings not strong	15.5	12.9	29.5	**
4. Strongly feel decision wrong	10.6	9.0	19.0	
No response	7.2	6.8	9.2	
73. Consult with close friends on important personal decisions				
1. Almost always	17.8	15.8	28.4	**
2. Usually	37.9	37.6	39.7	n.s.
3. Seldom	31.0	32.7	21.9	**
4. Almost never	12.3	13.0	8.6	**
No response	0.9	0.8	1.4	
74. Acquainted with a male engineer before college				
1. Yes	69.7	68.7	74.6	**
2. No	28.7	29.6	24.1	
No response	1.6	1.7	1.2	
75. Acquainted with a female engineer before college				
1. Yes	12.1	9.9	23.9	**
2. No	86.0	88.1	74.4	
No response	1.9	2.0	1.7	
76. Strongly motivated to be an engineer				
1. Strongly agree	33.2	33.0	34.1	
2. Agree	42.9	43.2	41.7	
3. Neutral, no opinion	14.0	14.0	13.8	
4. Disagree	6.2	6.3	5.6	
5. Strongly disagree	2.3	2.1	3.0	
No response	1.5	1.4	1.7	

Item and Response Description	Total	Men	Women	Significance of Difference
77. Strong interest in academic fields outside of engineering				
1. Strongly agree	30.9	30.2	34.7	**
2. Agree	44.0	43.7	45.6	
3. Neutral, no opinion	15.7	16.2	13.2	**
4. Disagree	6.6	7.0	4.5	**
5. Strongly disagree	1.7	1.9	0.8	
No response	1.0	1.0	1.3	
78. Expect a master's degree in engineering				
1. Strongly agree	19.5	19.5	19.7	
2. Agree	26.0	25.9	26.8	
3. Neutral, no opinion	28.3	28.8	25.7	n.s.
4. Disagree	19.1	19.2	18.8	
5. Strongly disagree	5.5	5.3	6.6	
No response	1.5	1.4	2.4	
79. Engineering is a good field to be in to help solve social problems				
1. Strongly agree	16.1	15.5	19.2	**
2. Agree	32.3	31.6	35.7	
3. Neutral, no opinion	34.2	35.1	29.9	*
4. Disagree	13.1	13.5	11.2	**
5. Strongly disagree	2.6	2.8	1.4	
No response	1.7	1.5	2.7	
80. Shouldn't worry about harmful effects of technology because new inventions will solve the problems				
1. Strongly agree	2.9	3.1	1.6	*
2. Agree	7.8	8.2	5.6	
3. Neutral, no opinion	9.5	9.0	12.2	*
4. Disagree	31.7	31.6	32.2	
5. Strongly disagree	46.7	46.7	46.3	
No response	1.5	1.4	2.1	